

Amendment and Response

Applicant: Andrew H. Barr et al.

Serial No.: 10/714,302

Filed: Nov. 14, 2003

Docket No.: 200308580-1/H300.216.101

Title: SYSTEM AND METHOD FOR TESTING A MEMORY USING DMA

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of the claims:

1. (Currently Amended) A computer system comprising:
 - a processor;
 - a first bus coupled to the processor;
 - a memory; and
 - a core electronics complex including:
 - a memory controller coupled to the first bus and the memory;
 - a first input/output (I/O) controller coupled to the first bus and configured to couple to a first set of one or more I/O devices using a first connection; and
 - a test module coupled to the first I/O controller using a second connection that is separate from the first connection;
 - wherein the test module is configured to provide test transactions to the first I/O controller to cause tests to be performed on the memory using the first bus.
2. (Original) The computer system of claim 1 further comprising:
 - an operating system;
 - wherein the processor is configured to cause the operating system to be booted, and
 - wherein the test module is configured to cause the tests to be performed on the memory using the first bus subsequent to the operating system being booted.
3. (Original) The computer system of claim 1 further comprising:
 - an operating system;
 - wherein the processor is configured to cause the operating system to be executed, and
 - wherein the test module is configured to cause the tests to be performed on the memory using the first bus during execution of the operating system.

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4. (Original) The computer system of claim 1 wherein the first bus comprises a system bus.

5. (Previously Presented) The computer system of claim 1 further comprising:
a second bus; and
a second set of one or more I/O devices coupled to the second bus;
wherein the core electronics complex includes a second I/O controller coupled to the first bus and the second bus.

6. (Currently Amended) The computer system of claim 1 wherein the test module is configured to cause tests to be performed on the memory using the first bus by providing transactions include read and write transactions to the first I/O controller.

7. (Original) The computer system of claim 6 wherein the read and write transactions comprise direct memory access (DMA) transactions.

8. (Original) The computer system of claim 1 further comprising:
a bus bridge coupled to the first bus and the first I/O controller.

9. (Currently Amended) A method performed by a computer system that includes a memory comprising:

selecting a portion of the memory for testing during operation of the computer system;
generating a test transaction in a test module coupled to an input/output (I/O) controller using a first connection that is separate from a second connection that is configured to couple the I/O controller to one or more I/O devices, the test module and the I/O controller included in a chipset coupled to the memory; and
providing the test transaction to the portion through the I/O controller using direct memory access (DMA).

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10. (Original) The method of claim 9 further comprising:
detecting an error that occurs in response to the test transaction; and
performing a remedial action in response to detecting the error.
11. (Previously Presented) The method of claim 9 further comprising:
providing the test transaction from the test module to the I/O controller;
providing the test transaction from the I/O controller to a bus bridge included in the
chipset;
providing the test transaction from the bus bridge to a system bus;
providing the test transaction from the system bus to a memory controller; and
providing the test transaction from the memory controller to the portion.
12. (Original) The method of claim 11 further comprising:
storing information in the memory in response to the test transaction being a write
transaction.
13. (Original) The method of claim 11 further comprising:
in response to the test transaction being a read transaction:
providing information associated with the test transaction from the portion to
the memory controller;
providing the information from the memory controller to the system bus;
providing the information from the system bus to the bus bridge;
providing the information from the bus bridge to the I/O controller; and
providing the information from the I/O controller to the test module.
14. (Previously Presented) The method of claim 9 further comprising:
providing the test transaction from the test module to the I/O controller;
providing the test transaction from the I/O controller to a system controller included
in the chipset;
providing the test transaction from the system controller to a memory controller; and

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providing the test transaction from the memory controller to the portion.

15. (Currently Amended) A computer system comprising:
 - a processor;
 - a bus coupled to the processor;
 - a memory;
 - a core electronics complex including:
 - a system controller coupled to the bus and the memory;
 - an input /output (I/O) controller coupled to the system controller and configured to couple to a set of one or more I/O devices using a first connection; and
 - a test module coupled to the I/O controller using a second connection that is separate from the first connection;
 - wherein the test module is configured to provide test transactions to the I/O controller to cause tests to be performed on the memory using direct memory access (DMA).
16. (Original) The computer system of claim 15 further comprising:
 - an operating system;
 - wherein the processor is configured to cause the operating system to be booted, and
 - wherein the test module is configured to cause the tests to be performed on the memory using DMA subsequent to the operating system being booted.
17. (Original) The computer system of claim 15 further comprising:
 - an operating system;
 - wherein the processor is configured to cause the operating system to be executed, and
 - wherein the test module is configured to cause the tests to be performed on the memory using DMA during execution of the operating system.
18. (Original) The computer system of claim 15 wherein the bus comprises a system bus.

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19. (Currently Amended) The computer system of claim 15 wherein the test module is configured to cause tests to be performed on the memory using DMA by providing transactions include read and write transactions to the I/O controller.

20. (Original) The computer system of claim 19 wherein the read and write transactions comprise direct memory access (DMA) transactions.